AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) Method for controlling a device for measuring quantitative proportions of blood constituents, in which electromagnetic radiation of different radiation frequencies is passed through a blood-containing vessel, and at least a portion of the radiation exiting the vessel is detected by sensors and fed to an evaluating device, wherein at least two radiation detection sensors (2, 3, 4) are positioned a certain distance apart and that the evaluating device is assigned a calibration characteristic curve, which is determined by an individual calibration measurement, in which at least one constant is used as the calibration criterion and is determined from at least one measurement variable (22) detected by the sensors (2, 3, 4), wherein during the measuring procedure a standard calibration function (13) is combined with a scattering determination (14) and the results of the standard calibration function

(13) as well as the output value of the scattering determination (14) are combined with each other by a combiner (16) according to an algorithm preset as an individual calibration function, an output value of the comparator (16) is combined with a measurement variable (17) and the combination of the output value of the combiner (16) and the measurement variable (17) yields the respective target quantity (18).

2. (Previously presented) Method in accordance with Claim 1, wherein at least three sensors (2, 3, 4) are used.

3. (Previously presented) Method in accordance with Claim 1, wherein the measuring determination is performed in a multiplex operation.

4. (Previously presented) Method in accordance with Claim 1, wherein electromagnetic radiation in the optical frequency range is used.

5. (Previously presented) Method in accordance with Claim 1, wherein pulse spectroscopy is used for the measuring

determination.

6. (Previously presented) Method in accordance with Claim 1, wherein spectrophotometry is used for the measuring determination.

7. (Previously presented) Method in accordance with Claim 1, wherein the spatial scattering of the radiation is determined by measurement technology.

8. (Previously presented) Method in accordance with Claim 1, wherein the scattering is determined by determining a radiation intensity that deviates from the primary irradiation direction.

9. (Previously presented) Method in accordance with Claim 1, wherein a periodic calibration is carried out during the performance of the measurement.

10. (Previously presented) Method in accordance with Claim 1, wherein the scattering is determined by the relationship between the amplitudes of the measured values of the

individual sensors (2, 3, 4).

11. (Previously presented) Method in accordance with Claim 1, wherein an oxygen concentration of the blood is determined.

12. (Previously presented) Method in accordance with Claim 1, wherein a relative oxygen concentration of the blood is determined.

13. (Previously presented) Method in accordance with Claim 1, wherein an absolute oxygen concentration of the blood is determined.

14. (Currently amended) Device for measuring quantitative proportions of blood constituents, which has at least one emission source for generating electromagnetic radiation and at least one sensor, which detects the transmitted portion of the radiation and is connected with an evaluating device, wherein the evaluating device (10) has at least two sensors (2, 3, 4) and that the evaluating device (10) has an analyzer (11) for determining the angle-dependent scattering of the radiation by evaluating the signals received from the

individual sensors (2, 3, 4), wherein a standard calibration function (13) is implemented in an area of the evaluating device (10), the evaluating device (10) having a combiner (16) that is operative to combine results of the standard calibration (13) and an output value of a scattering determination (14) according to an individual calibration function, whereby an output value of the combiner (16) and a measurement variable (17) yields a target value (18).

15. (Previously presented) Device in accordance with Claim 14, wherein at least three sensors (2, 3, 4) are connected to the evaluating device (10).

16. (Previously presented) Device in accordance with Claim 14, wherein at least two emission sources (5, 6, 7) are used.

17. (Previously presented) Device in accordance with Claim 14, wherein at least three emission sources (5, 6, 7) are used.

18. (Previously presented) Device in accordance with Claim 14, wherein at least one of the emission sources (5, 6, 7) is designed as a light-emitting diode.

19. (Previously presented) Device in accordance with Claim 14, wherein at least one of the emission sources (5, 6, 7) is designed as a laser diode.

20. (Previously presented) Device in accordance with Claim 14, wherein at least one of the sensors (2, 3, 4) is designed as a photodiode.

21. (Previously presented) Device in accordance with Claim 14, wherein the sensors (2, 3, 4) are spaced essentially equal distances apart relative to one another.